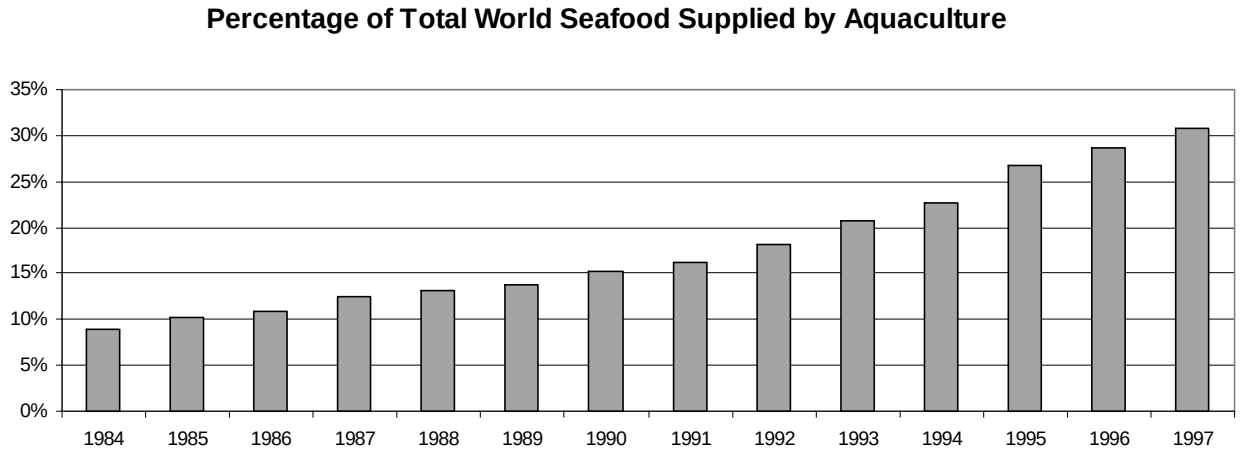
Aquaculture Overview

World supply of seafood from the wild has remained stable for the last ten years and is not likely to increase because fisheries are at their maximum. However, the demand for seafood products is steadily increasing due to the growth of population and consumers recognizing the health benefits of fish and shellfish. The following is an overview of the aquaculture situation in the world, the United States, and in Kentucky.

Internationally

Aquaculture is one of the fastest growing food production activities in the world. A large part of the increase in annual global seafood production is attributable to the growth in aquaculture. The world is increasing by 90 million persons per year, which is equivalent to creating a new United States every three years. Per capita consumption of fish averages 42 pounds per year. In 1996, total aquaculture production was 26,384,000 tons. Aquaculture will need to double in the next fifteen years to keep pace with demand.

Chart 1 – Increases in global seafood has come from increased aquaculture production



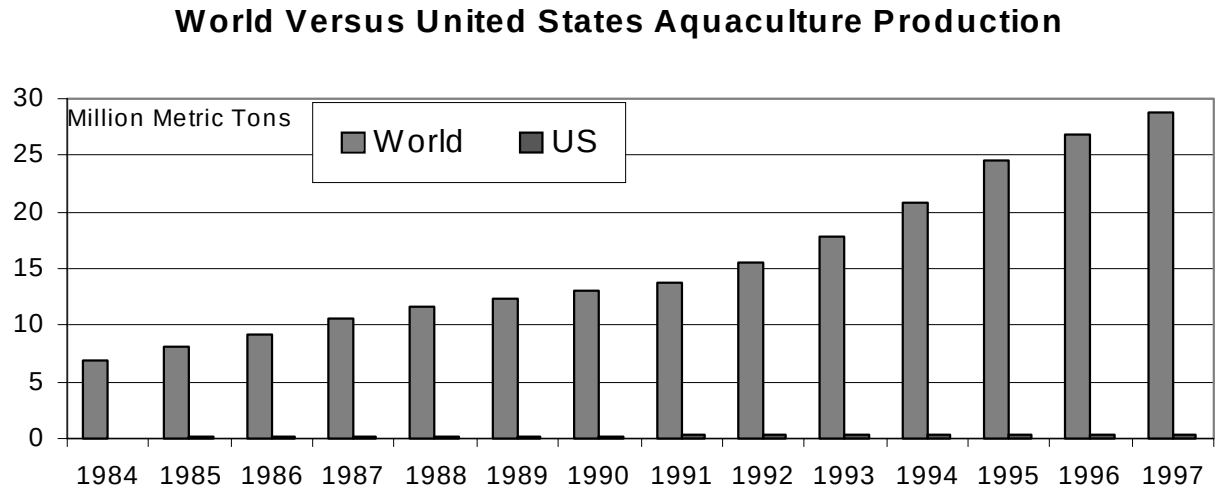
Source: Food and Agriculture Organization of the United Nations Fisheries Department, FISHSTAT Plus Data sets

In the United States

In the U.S. aquaculture is one of the fastest growing segments of U.S. agriculture. Between 1985 and 1996 aquaculture production increased 84.6% (to 693,693,000 pounds) and value increased 155% (to $885,635,000). In 1998, per capita consumption of seafood in the U.S. was 14.6 pounds. The U.S. trade deficit in edible fisheries products is $5 billion per year, with shrimp alone being almost $2 billion. In 1998, total shrimp imports reached $3.1 billion, an increase of 5% from the previous two years. Imports are expected to continue to increase. The demand for fish and shellfish increases 40 million pounds per year based on population growth. Aquaculture products

represent 15% of total seafood consumption in the U.S. This percentage is expected to double within the next 10 years.

Chart 2 – Aquaculture production has increase worldwide. The U.S. aquaculture has a great potential for increasing.

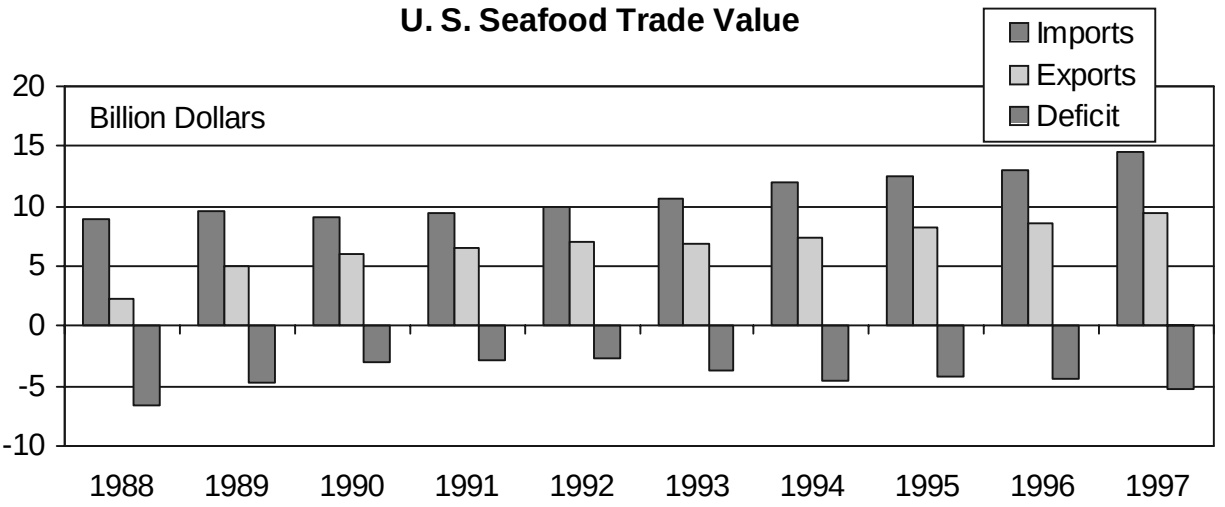


Source: Food and Agriculture Organization of the United Nations Fisheries Department, FISHSTAT Plus Data sets and Fisheries of the United Stats, 1998, U.S. Department of Commerce, National Oceanic and Atmospheric Adminstration, National Marine Fisheries Service

The catfish industry continues to expand, as does per capita consumption of catfish. Catfish farmers' total sales in 1997 were $427 million and increased to $469 million in 1998, setting new records. Fresh catfish sales were up 6 percent while frozen catfish sales increased by 8 percent.

Over 60% of the U.S. seafood supply is imported. Increased seafood demand is being met by imports, making the U.S. the world's second largest importer of fisheries products (behind Japan).

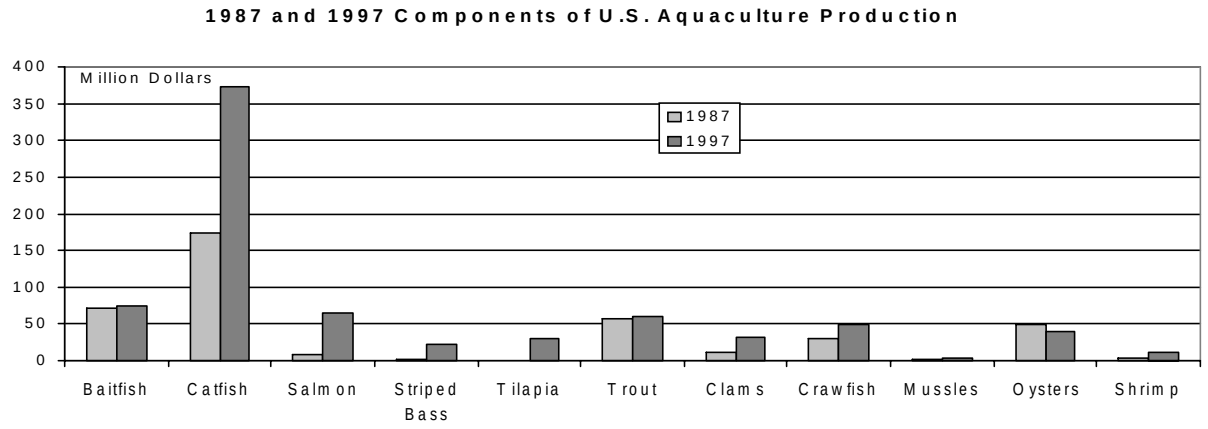
Chart 3 – U.S. imports of seafood have increased.



Source: Fisheries of the United States, 1998; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service

Domestic wild seafood harvest is not expected to expand given the increased stringent catch limitations. In the last 5 years, there has been increased consumption of farm-raised catfish, tilapia, salmon, and shrimp and to other farm-raised species. Two-thirds of domestic aquaculture production occurs in the southeast United States. The number of growers has increased aquaculture pond acreage to 175,220 acres. The growth in population of the United States should allow for continued aquaculture growth as the traditional, live and food service, markets expand in size. Additionally, due to the forecast of a strong domestic economy and low overall unemployment in the U.S., it is expected there will be increased eating in restaurants, an extremely important outlet for most seafood products.

Chart 4 – Areas of U.S. aquaculture production.



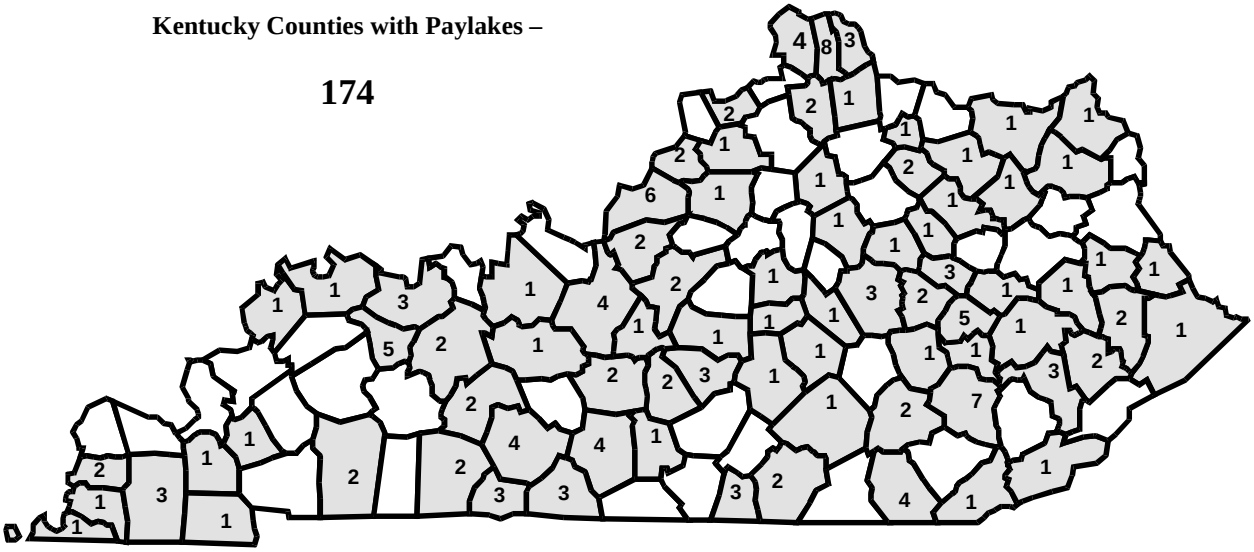
Source: Fisheries of the United States, 1998; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service

In Kentucky

According to USDA, much of the future growth of U.S. aquaculture will occur in new species and in regions where aquaculture is a new enterprise. Kentucky's climate is well suited for production of new species such as hybrid striped bass, freshwater shrimp, and paddlefish, and is suitable for production of traditional species such as catfish and trout. Kentucky's location is within a day's drive of many major metropolitan centers, making it ideally suited for marketing fresh and even live product, a rapidly increasing product form.

Kentuckians consume over 60 million pounds of seafood per year, worth an estimated $568 million annually. Less than 4% of the seafood consumed is produced within the commonwealth. Approximately one million pounds of both rainbow trout and channel catfish are currently produced annually in Kentucky. Annual catfish production could be tripled if catfish currently stocked in Kentucky pay lakes were purchased from Kentucky producers. Kentucky has over 130,000 existing ponds of which 100,000 may be greater than or equal to ¼ acre in size.

Chart 5 – Pay lakes in Kentucky.



Source: KDA Aquaculture Directory, 1998

Aquaculture, being an agriculture enterprise, is compatible with small farm production and rural lifestyles and economies. Kentucky has a need for additional profitable farm enterprises. Kentucky has a well-qualified team of researchers and extension specialists, with over 10 years of Kentucky-based results to build on.

At Kentucky State University

The KSU Aquaculture Program, through the assistance of a state-supported KDA Grant, is providing hatchery and nursery production of over 400,000 stocker shrimp for grow-out ponds across the commonwealth and is working with private producers to initiate production of fingerling paddlefish. KSU is the national leader in research on freshwater shrimp, paddlefish, and its caviar.

The Aquaculture Research Center and Cooperative Extension Service Programs at KSU provide statewide services of aquaculture production consulting, disease diagnostics, water quality testing, and site evaluations. Additionally, KSU is working with KDA on identifying and developing domestic and export markets for new and traditional species. The program is presently conducting field trials on feed-trained largemouth bass, which have strong market potential in both sportfish and export markets.